

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Report No. 50-219/92-11
Docket No. 50-219
License No. DPR-16
Licensee: GPU Nuclear Corporation
P.O. Box 388
Forked River, New Jersey 08731
Facility Name: Oyster Creek Nuclear Generating Station
Inspection At: Forked River, New Jersey
Inspection Conducted: May 11-15, 1992

Inspector: Laurie Peluso 6/8/92
Laurie Peluso, Radiation Specialist
Effluents Radiation Protection Section (ERPS)
Facilities Radiological Safety and
Safeguards Branch (FRS&SB) Date

Approved by: for Jason C. Yang 6-9-92
Robert J. Borek, Chief, ERPS, FRS&SB
Division of Radiation Safety and Safeguards Date

Areas Inspected: Unannounced safety inspection of the liquid and gaseous radioactive effluent controls program including: management controls, quality assurance audits, calibrations of effluent/process radiation monitoring systems, air cleaning systems, and implementation of the Offsite Dose Calculation Manual (ODCM).

Results: Within the areas inspected, the licensee effectively implemented the above programs. No violations or safety concerns were identified. However there were weaknesses in the licensee's program for calibrating the liquid effluent radiation monitoring system. (See Section 7.0 of this inspection report for details).

DETAILS

1.0 Individuals Contacted

1.1 Licensee Personnel

- J. Anvari, Senior Plant Engineer
- * R. Barrett, Plant Operations Director
- * W. Cooper, Radiological Engineering Manager
- * B. DeMerchant, Licensing Engineer
- * R. Harkleroad, I&C Engineering
- * E. Johnson, I&C Engineering
- * S. Molello, Environmental Controls
- * M. Slobodien, Radiological Controls
- * R. Stoudnour, Operations/Chemistry
- P. Thompson, Site QA Audit Manager

1.2 NRC Personnel

- * J. Nakoski, Resident Inspector

- * Denotes those present at the exit interview on May 15, 1992.
Other licensee employees were contacted and interviewed during this inspection.

2.0 Purpose

The purpose of this inspection was to review the licensee's ability to control and quantify effluent radioactive liquids, gases, and particulates according to Technical Specifications, Onsite Dose Calculation Manual (ODCM), and appropriate procedures during normal and emergency operation.

3.0 Licensee's Actions on Previously Identified Items

(Open) Violation (50-219/90-13-01). Inoperability of the radwaste overboard discharge radiation monitor. During the review of the radwaste overboard discharge (liquid effluent) radiation monitor, the inspector evaluated the licensee's efforts to restore, calibrate, and return the liquid effluent monitor to service. The inspector noted that the licensee was currently in the process of upgrading the calibration procedures and had restored the monitor by cleaning and decontaminating the sample chamber, replacing certain components, and performing electronic and radiological

calibrations. The inspector also noted that there were several weaknesses in the licensee's calibration procedures. (See Section 7.0 of this report for details). Since the licensee's commitment date to restore the monitor is August 1992, the licensee will continue to review and improve the radiological calibration procedures as appropriate. The inspector stated that this will be reviewed during a subsequent inspection.

4.0 Management Controls

4.1 Audits

The inspector reviewed the following licensee's Quality Assurance Audit Report as part of the evaluation of the implementation of Technical Specification requirements.

Audit No. S-0C-91-27, Offsite Dose Calculation Manual, 12/6/91

This audit was conducted by the Quality Assurance Department during the time interval of June 17, 1991 to November 7, 1991. The inspector noted that this audit documented two findings, none of safety significance. Response to these items was timely; corrective actions were appropriate; and the findings were closed. The ODCM audit covered aspects of the effluent program including alarm trip setpoints for the monitors and Technical Specification surveillances. The inspector also reviewed the GPU Nuclear Audit Matrix to determine the objectives of the audit. These objectives met Technical Specification audit requirements. The audit was thorough and of adequate technical depth to assess the Effluent Controls Program. The inspector had no further questions in this area.

4.2 Program Changes

The inspector reviewed the organization and administration of the radioactive liquid and gaseous effluent control programs and discussed with the licensee any changes since the last inspection which was conducted in August 1990. There were no changes in the oversight of the effluent controls program since the previous inspection. The inspector had no further questions in this area.

5.0 Review of the Semiannual Effluent Release Reports

The inspector reviewed the semiannual radioactive effluent release reports for 1991 and determined that the licensee met the Technical Specification reporting requirements. These reports provided total released radioactivity for liquid and gaseous effluents. No obvious anomalous measurements, omissions or trends were noted.

6.0 Liquid and Gaseous Effluent Controls Program

The inspector reviewed the licensee's procedures and available effluent release data as part of the examination of the implementation of the Technical Specification (TS) requirements.

The inspector noted that the procedures were detailed and well written. There were no liquid radwaste effluent releases during 1991 because of the licensee's program to minimize the routine release of radioactive liquid from the site during normal operation. Therefore, there were no liquid release permits.

The inspector reviewed gaseous effluent controls via the available weekly iodine and particulate sample data and the monthly gaseous grab samples for noble gases. The reviewed results indicated that samples were collected as required and no anomalous data were identified during this inspection.

Based on the above reviews and discussion with the licensee, the inspector determined that the licensee was implementing the radioactive liquid and gaseous effluent control programs effectively. The inspector had no further questions in this area.

7.0 Calibration of Effluent/Process Radiation Monitors

The inspector reviewed the calibration procedures and the most recent calibration results for the following effluent/process monitors to determine the implementation of the Technical Specification requirements.

- Main Steam Line Monitors
- Service Water Radiation Monitor
- Domestic Effluent Radiation Monitor
- Reactor Building Closed Cooling Water Monitor
- Radwaste Overboard Discharge Radiation Monitor
(Radioactive Liquid Effluent Monitor)
- Air Ejector Offgas Monitor
- Main Stack Noble Gas Monitors (RAGEMS, Low and High Range)
- Turbine Building Noble Gas Monitors (RAGEMS, Low and High Range)

The Instrument and Controls (I&C) Department had the responsibility to perform the electronic and radiological calibrations for the above monitors.

During the review of calibration procedures and results of the above effluent/process monitors, in particular the Service Water Radiation Monitor and the Radwaste Overboard Discharge Radiation Monitor, the inspector noted that the calibration results were within the licensee's acceptance criteria. However, the inspector identified the following weaknesses as described in the following paragraphs.

During the review of the service water radiation monitor calibration results, the licensee used three calibration radionuclides (Ba-133, Cs-137, and Co-60) with two source strengths for each radionuclide to establish the calibration curve. The licensee, however, was not able to verify the linearity and calibration factor ($\mu\text{Ci/cc/cpm}$). The inspector noted that the service water monitor had a history of frequent failures. The inspector was informed that the failures were due to the growth of algae in the monitoring chamber. The inspector discussed this issue with the licensee who will further review and take action as appropriate.

The Radwaste Overboard Discharge (liquid effluent) Radiation Monitor had been out of service as described during the previous inspection. (See Inspection Report Number 50-219/90-13 for details). The inspector noted that because the duration of time the monitor had been out of service was extensive, the sampling chamber of the monitor had been cleaned and decontaminated, certain components had been replaced, and the electronics had been refurbished and recalibrated. The licensee has committed to return the monitor to service in August 1992.

The inspector noted the licensee used only two "button" radionuclide sources (one each Cs-137 and Co-60) to "calibrate" the monitoring system. The licensee recorded counts per minute (cpm) from the ratemeter. These data alone have little practical significance in calibrating the monitor. The inspector noted that the licensee did not perform a primary calibration using sources traceable to the National Institute of Standards and Technology (NIST). The inspector discussed with the licensee a complete and thorough calibration according to the methodology of current industry practice.

The inspector also discussed with the licensee the following items to be considered for incorporation into the calibration procedures:

- Perform plateau checks for each monitor to verify the operating high voltage and the sensitivity of the monitor to variations in operating voltage.
- Verify linearity over the operating range and calibration factors.
- Perform statistical analyses, such as linear regression, to verify the linearity and to compute the calibration factors.

The licensee stated that these items will be evaluated and incorporated in the calibration procedures, as appropriate. The inspector stated that the calibration procedures and results will be evaluated during a subsequent inspection. No violations were identified.

8.0 Air Cleaning System

The inspector reviewed the licensee's procedures and most recent test results to verify the implementation of the Technical Specification requirements. The following inspection and test results for the Standby Gas Treatment System (SGTS) were reviewed.

- Visual Inspections
- In-place HEPA Leak Tests
- In-place Charcoal Leak Tests
- System Air Flow Tests
- Laboratory Tests for the Iodine Collection Efficiencies

Based on this review, the inspector determined that the above test results reviewed were within the Technical Specification requirements.

9.0 Exit Interview

The inspector met with the licensee representatives denoted in Section 1.0 of this inspection report at the conclusion of the inspection on May 15, 1992. The inspector summarized the purpose, scope, and findings of the inspection.